Date: Thu, 23 Dec 93 04:30:15 PST
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V93 #151
To: Ham-Ant

Ham-Ant Digest Thu, 23 Dec 93 Volume 93 : Issue 151

Today's Topics:

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

Date: 22 Dec 93 17:52:04 GMT
From: ogicse!uwm.edu!math.ohio-state.edu!mane.cgrg.ohio-state.edu!
aus1.robins.af.mil!wrdis02.robins.af.mil!gwood@network.ucsd.edu
Subject: 6m quad design,help
To: ham-ant@ucsd.edu

Needs help on a design for a 6m quad 3,4,5 element
would be just great can some one out there please help me
out

73's greg

Date: 22 Dec 1993 19:11:19 GMT
From: usc.edu!howland.reston.ans.net!math.ohio-state.edu!mane.cgrg.ohio-state.edu!
aus1.robins.af.mil!wrdis02.robins.af.mil!gwood@network.ucsd.edu
Subject: 6m quad design,help
To: ham-ant@ucsd.edu

would really like to get some help on design a quad for 6m
if any one out there know's of good design with at least
3,4,5
element's would be just great.or tell of about some really good books

GREG WOOD

Date: 22 Dec 1993 17:26:38 GMT
From: library.ucla.edu!agate!howland.reston.ans.net!math.ohio-state.edu!
mane.cgrg.ohio-state.edu!aus1.robins.af.mil!wrdis02.robins.af.mil!
gwood@network.ucsd.edu
Subject: 6m quad design,help
To: ham-ant@ucsd.edu

need help building a 6m quad so i can use it on packet,ssb,fm,am,cw
any design with at least 3,4,5 element's would be a big help.
--

GREG WOOD

Date: 22 Dec 1993 17:43:49 GMT
From: library.ucla.edu!europa.eng.gtefsd.com!howland.reston.ans.net!math.ohio-
state.edu!mane.cgrg.ohio-state.edu!aus1.robins.af.mil!wrdis02.robins.af.mil!
gwood@network.ucsd.edu
Subject: 6m quad design,help
To: ham-ant@ucsd.edu

need help on a design for a 6m quad 3,4,5,element or good bookWITH
DESIGN, would be a help.
thisantenna is goint to used is going to be used on ssb,packet,fm,am,
--

GREG WOOD
kc4ybl

Date: 22 Dec 1993 15:54:08 GMT
From: library.ucla.edu!europa.eng.gtefsd.com!howland.reston.ans.net!math.ohio-state.edu!mane.cgrg.ohio-state.edu!aus1.robins.af.mil!wrdis02.robins.af.mil!gwood@network.ucsd.edu
Subject: 6m quad help
To: ham-ant@ucsd.edu

would like to build a 6m quad for packet,ssb,fm,am,cw and i would like
for it to have at least 3,4,5, elements if any body out there can help
me out with either a good book or design would be a great help.

--

kc4ybl
GREG WOOD

Date: Tue, 14 Dec 1993 19:47:08 GMT
From: rit!sunsrvr6!sunsrvr6.cci.com!jbu@cs.rochester.edu
Subject: AM Antenna for my Stereo receiver
To: ham-ant@ucsd.edu

I'm looking to get better directional reception from my Pioneer Receiver
on the AM band for listening to Buffalo Sabre's games. Can anyone give me a
low cost solution to adding to my Receiver. It already has a poorly performing
loop antenna. Where can I get the supplies (escpecially the small wire) to
make a better antenna, maybe for indor or outdoor. Thanks for any help.

--

nn nn   tt   John J Burkard   Internet: jbu@cci.com
nnnnnn   tttttt   Northern Telecom. Inc.   Usenet: uupsi!cci632jbu!

nn nn   tt   Rochester, New York.   or : uunet!ccicpg!cci632jbu!
nn nnn   ttt

Date: Tue, 21 Dec 1993 15:21:07 GMT
From: ucsnews!sol.ctr.columbia.edu!howland.reston.ans.net!news.intercon.com!udel!
news.sprintlink.net!direct!news.direct.net!kg7bk@network.ucsd.edu
Subject: Antenna Tuner Questions
To: ham-ant@ucsd.edu

John Seboldt (rohrwerk@orac.holonet.net) wrote:

: What your students should really hear is that your typical commercial
: antenna tuner with the balun on the output is taking the cheap way out.
: John K0JD

Thanks John, I agree and my homebrew antenna tuner has a balanced output
with no sign of a balun. But these students want to buy an antenna tuner
to use with a non-resonant antenna. I need the equations governing the
transfer function of a voltage and/or current balun that is not arcing
and/or saturating. I can't find them in W2FMI's book, Maxwell's book, or
any of the ARRL publications that I own. Where the heck are they?

73, Cecil, kg7bk@indirect.com

Date: 15 Dec 1993 11:43:23 GMT
From: olivea!inews.intel.com!ilx018.intel.com!ilx049!dbraun@uunet.uu.net
Subject: Apartment Antenna VHF/UHF
To: ham-ant@ucsd.edu

Is the apartment the basic wallboard/wood frame place? If so,
I suggest that you just do what the cable TV and telephone companies do
in this situation: just drill a hole. Get a really long drill bit, just a
bit bigger than the cable, and make a hole near the baseboards in the
wall opposite the balcony. When you move out, just daub some caulking
on the outside hole, and wome wall-patching stuff on the inside, and they'll
never notice it.

--

Doug Braun   Intel Israel, Ltd.   M/S: IDC1-41
               Tel: 011-972-4-655069   dbraun@inside.intel.com

---

Date: 15 Dec 93 18:53:41 GMT
From: mentor.cc.purdue.edu!sage.cc.purdue.edu!aj@purdue.edu
Subject: Base Station Cellular Antennas
To: ham-ant@ucsd.edu

  If you have access to hot air heating ducts which are at least 7 inches across in any dimension, you may be able to use them as waveguides to get you into some other part of the complex where it will be able to reradiate enough of the energy to make an outbound connection. However, I wonder if your nearby cell will be close enough to get some radiation >back< into the heating duct at high enough levels that you have a reasonable signal.

  This all hinges on having the heating duct appear with an opening someplace pointed toward a window, non-metal door, or lucky shot out through an air-to-air heat exchanger somewhere in the physical plant.

  If you run 5W, you'd probably be able to get out of the ducts.

  Any comments?

: John Dormer
: aj@sage.cc.purdue.edu

Date: 22 Dec 93 00:35:30 GMT
From: uswnvg!tconboy@uunet.uu.net
Subject: Base Station Cellular Antennas
To: ham-ant@ucsd.edu

Tad Cook (tad@ssc.com) wrote:

: Anyone have any recommendations for cellphone antennas when they
: are installed in a base station?

: I'm trying to figure out the best all around solution when we have
: a cellular transceiver (similar to the Tellular units) installed
: in heavily steel reinforced concrete buildings....specifically
: telephone company central office switches.

[part deleted]

: Anyone have any knowledge of similar installations, like maybe
: those alarm systems that use cellular? Any antenna recommendations
: for easy installations?

I've used the yagis from Larsen and Celwave for this type of application

with good luck. Larsen YA5 800: 6 elements, 10 dBd, type N connector, 32" long at $110 list. Celwave PD10108: 9 elements, 10 dBd, type N connector, 31" long at $236 list.

Celwave also makes a fiberglass marine antenna which is omni and has 6 dBd gain. It's model CEL-3, has a type N connector and lists for $303. There are a variety of mounting brackets available at extra cost. (We use the CEL-1 at our cell sites for a test radio to couple to the exterior of the cell site buildings, but it only has 3 dBd gain).

You could use an antenna designed for cell site transmitter duty, but they are much more expensive (typically $1K or more). Some have 17 dBd gain or more.

You can probably get a discount off the list prices above with no trouble.

73, Terry
--
Terry Conboy   email: tconboy@uswnvg.com
U S WEST NewVector Group   packet: n6ry@n7ipb.wa.usa
3350 - 161st Ave SE, MS 571   office: (206) 450-8388
Bellevue, WA 98008   fax: (206) 450-8399

Date: Mon, 20 Dec 1993 20:52:32 GMT
From: pacbell.com!sgiblab!spool.mu.edu!news.nd.edu!mac08@network.ucsd.edu
Subject: Commercial Antenna Tuners
To: ham-ant@ucsd.edu

I have enjoyed following the recent thread on antenna tuner designs (pi, etc.) and wonder whether someone might be in a position to comment on how the commercially-available tuners are constructed, and how well they work. Most of the advertising copy only indicates number of possible connections, power rating, whether there is a turns counter, dummy load, etc.

Are most of the commercial products pi tuners or another design? Should the user care, or is it a question of whether a particular design is well-implemented?

Are there significant differences in quality between the "standard" brands (MFJ, Ameritron, Nye, etc.)? Does price (around $300 for the better MFJ tuners, more for the premium tuners from other manufacturers) generally correspond with quality?

Are there any balanced tuner designs commercially available? What is the Johnson Matchbox, which is frequently mentioned in the rec.radio

newsgroups?

As described by MFJ, the 986 differential T tuner certainly sounds convenient--only two adjustments to make, only one optimum setting instead of multiple dips. Does it work as well in practice as in theory?

On the subject of MFJ--they seem to make a heck of a lot of different tuners. Do they have any special competence in this area, or what? I have heard cynical remarks about MFJ products from time to time . . .

Thanks,

Charles Hohenstein
N9SQE

Date: 22 Dec 93 17:36:45 GMT
From: ogicse!hp-cv!hp-pcd!hpcvsnz!tomb@network.ucsd.edu
Subject: definition of "matched"
To: ham-ant@ucsd.edu

Cecil Moore (kg7bk@indirect.com) wrote:

: Quoting from the ARRL Antenna Handbook: "A line terminated in a purely
: resistive load equal to the characteristic line impedance is said to
: be *matched*...The more that R differs from Z0, the greater the mismatch."

: Now is this statement from a recent magazine article true or false?

: The antenna tuner "tunes out all mismatches in the system, including
: transmission line to antenna mismatch,..."

Interestingly, the author can weasle out of this one easily: it means that the tuner can make all mismatches invisible to the transmitter, and present the transmitter with a "matched" load, independent of where the mismatches are in the system. Note that, given a load "within the range of the tuner", you can put the tuner anywhere along the line, and even have a line made of sections of differing impedance, and tune the tuner so that the transmitter is presented with a "matched" load. (I'm excluding some corner cases in that "within the range..." catchall.)

Date: 21 Dec 1993 23:56:56 GMT
From: swrinde!sdd.hp.com!col.hp.com!news.dtc.hp.com!hpscit.sc.hp.com!
rkarlqu@network.ucsd.edu

Subject: definition of "matched"
To: ham-ant@ucsd.edu

In article <CIEL80.2uG@news.direct.net>,
Cecil Moore <kg7bk@indirect.com> wrote:
>
>Now is this statement from a recent magazine article true or false?
>
>The antenna tuner "tunes out all mismatches in the system, including
>transmission line to antenna mismatch,..."

Well, of course it does----as long as the tuner is at the
antenna end of the transmission line :-) (I actually
build a Zepp this way once, the tuner was at the top of
the tower!).

Rick Karlquist N6RK
rkarlqu@scd.hp.com

Date: Wed, 22 Dec 1993 03:37:53 GMT
From: usc.edu!howland.reston.ans.net!agate!msuinfo!harbinger.cc.monash.edu.au!
bruce.cs.monash.edu.au!trlluna!titan!pcies4.trl.OZ.AU!drew@network.ucsd.edu
Subject: definition of "matched"
To: ham-ant@ucsd.edu

In article <CIEL80.2uG@news.direct.net> kg7bk@indirect.com (Cecil Moore) writes:
>From: kg7bk@indirect.com (Cecil Moore)
>Subject: definition of "matched"
>Date: Tue, 21 Dec 1993 21:04:48 GMT
>
>Quoting from the ARRL Antenna Handbook: "A line terminated in a purely
>resistive load equal to the characteristic line impedance is said to
>be *matched*...The more that R differs from Z0, the greater the mismatch."
>
>Now is this statement from a recent magazine article true or false?
>
>The antenna tuner "tunes out all mismatches in the system, including
>transmission line to antenna mismatch,..."
>
>Please respond to my Internet address at kg7bk@indirect.com and feel free
>to include the reasons that you think the statement is true or false.
>
>I'm going to send the results to the author.
>
>Thanks and 73, Cecil, kg7bk@indirect.com
>

We can probably safely assume that the writer of the magazine article implies that the tuner is located at the equipment (radio) end of the transmission line. A tuner thus located, properly adjusted, can only provide a match between the radio, and the impedance (perhaps a complex impedance) presented to the radio at the equipment end of the transmission line. Any mismatch which may exist between the antenna end of the line, and the antenna remains unchanged.

For example, say the SWR on the line is measured as 2.0; a mismatch therefore exists somewhere between the radio and antenna. Now if the tuner is interposed between the SWR meter and line, it may be possible to bring the SWR BETWEEN THE RADIO AND TUNER down to 1.0 with correct adjustment of the tuner. However, the SWR, beyond the tuner, in the section of line which runs to the antenna will still be 2.0 (assuming no significant harmonic energy is present at the output of the radio).

73, Drew, VK3XU Telecom Australia Research Laboratories.

Date: 15 Dec 1993 12:26:52 GMT
From: ghost.dsi.unimi.it!univ-lyon1.fr!elendir@tcgould.tn.cornell.edu
Subject: Designing a Yagi. An Algorithm ?
To: ham-ant@ucsd.edu

Hi there,

I know some now PD programs help you designing Yagi antennae (e.g. the excellent Yagimax). Since I have no PC at home, I was wondering if anybody were aware of the algorithm used by those utilities, in order to write a version for my own computer.

Were can I find such info ?

Thanx.

73 from France, Vince (waiting for my callsign, must be F1J.. or F1K..)

--
PSG Vainqueurs de la coupe de France 1982, 1983, 1993
PSG Champions de France 1985/86 1/2 Finaliste C3: 1993
PSG   PARIS SAINT GERMAIN FC --- NOTRE HISTOIRE DEVIENDRA LEGENDE.

Date: Mon, 20 Dec 1993 16:40:33 GMT
From: rd1.InterLan.COM!sun1.interlan.com!tavernin@uunet.uu.net
Subject: Hustler Mobile as Base Antenna

To: ham-ant@ucsd.edu

I happen to have a Hustler mobile antenna and a 40 meter resonator ...
and was wondering ... is it possible to use it as a base anteenna?

If so, would I need to add radials?

Thanks,

Victor Tavernini
Racal-Datacom, Inc.

tavernin@sun1.interlan.com

Date: Tue, 21 Dec 1993 00:30:37 GMT
From: pacbell.com!sgiblab!swrinde!gatech!udel!news.sprintlink.net!direct!
news.direct.net!kg7bk@network.ucsd.edu
Subject: Hustler Mobile as Base Antenna
To: ham-ant@ucsd.edu

Victor Tavernini (tavernin@sun1.interlan.com) wrote:
: I happen to have a Hustler mobile antenna and a 40 meter resonator ...
: and was wondering ... is it possible to use it as a base anteenna?
: If so, would I need to add radials? Thanks, Victor Tavernini

Victor, I have that antenna for mobile work because I can't install a
much longer antenna. It has been very heavily compromised because of that.
The radiation resistance is very, very low and an SWR of 1/1 is possible
only because of the considerable losses. Read what Maxwell has to say
about mobile antennas in general and Hustlers in particular in "Reflections"
before you consider using it as a base antenna. The reason that almost
nobody does it is they are throwing a very high percentage of their power
away in losses.

73, Cecil, kg7bk@indirect.com

Date: 22 Dec 93 15:19:10 GMT
From: news-mail-gateway@ucsd.edu
Subject: MFJ 2-meter mag mount
To: ham-ant@ucsd.edu

Jerry,

I've had an MFJ 5/8 wave mag mount antenna for a few months now and it

works well. The SWR with my HT was around 1.1-1.2 through most of the 2 meter band. I was able to work a repeater about 30 air miles away with full quieting with 1 watt using the HT and the antenna mounted on the roof of the car. And, on another occaision, worked a station about 40-50 miles away on simplex, using a 10 watt base rig and the antenna sitting on the floor in my house. However, the signal was "weak but readable". I don't know alot about 2 meter's but suspect that this performance is probably just average. The antenna seems to be pretty sturdy and the adapter that holds the whip to the magnet is detatchable from a standard fitting. I've driven it through trees with no visible damage. The antenna also seems to work well with my scanner. The only complaint i have is the set-screws that hold the whip to the adapter. I was driving around without the whip installed and one of the set-screws vibrated lose, probably because I never tightened them up after removing the whip. The problem is finding a replacement. They must be metric or have some odd thread pitch since none of the standard sizes at my "local True Value" store ("Good Day!) fit. I think it's a good value for the money and BTW I got mine from a dealer at a hamfest for $22. About the set-screws, anyone out there know what size these buggers are?

'73 Mark, KA3LFG

Date: Wed, 22 Dec 93 01:08:05 GMT
From: news.service.uci.edu!usc.edu!howland.reston.ans.net!newsserver.jvnc.net!a3bee2.radnet.com!cyphyn!randy@network.ucsd.edu
Subject: Sealant for antenna's connectors
To: ham-ant@ucsd.edu

I've used poly-urathane varnish, applied after all the connectors are screwed together and an RF test made to be sure all is well.
Apply with a brush...not a spray can...and 'get' all the places where seams or joins are at...any mating surfaces of metal/metal or metal/plastic.

That other glop I've seen , thats like black window putty, is a joke!

--
Randy KA1UNW If you get a shock while
servicing your equipment, "Works for me!"
randy@192.153.4.200 DON'T JUMP! -Peter Keyes
You might break an expensive tube!

End of Ham-Ant Digest V93 #151
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